

Title (en)  
OXYGEN CARRYING MATERIALS

Title (de)  
SAUERSTOFFTRÄGERMATERIALIEN

Title (fr)  
MATÉRIAUX VECTEURS D'OXYGÈNE

Publication  
**EP 2707583 A4 20141022 (EN)**

Application  
**EP 12782066 A 20120511**

Priority  
• US 201161484982 P 20110511  
• US 2012037557 W 20120511

Abstract (en)  
[origin: WO2012155059A1] In accordance with one embodiment of the present disclosure, an oxygen carrying material may include a primary active mass, a primary support material, and a secondary support material. The oxygen carrying material may include about 20% to about 70% by weight of the primary active mass, the primary active mass including a composition having a metal or metal oxide selected from the group consisting of Fe, Co, Ni, Cu, Mo, Mn, Sn, Ru, Rh, and combinations thereof. The oxygen carrying material may include about 5% to about 70% by weight of a primary support material. The oxygen carrying material may include about 1% to about 35% by mass of a secondary support material.

IPC 8 full level  
**F01K 3/00** (2006.01); **F01K 3/18** (2006.01); **F02C 1/00** (2006.01); **F02C 1/08** (2006.01); **F23C 99/00** (2006.01)

CPC (source: EP US)  
**F23C 10/04** (2013.01 - US); **F23C 13/08** (2013.01 - US); **F23C 99/00** (2013.01 - EP US); **F23C 2900/99008** (2013.01 - EP US);  
**Y02E 20/34** (2013.01 - US)

Citation (search report)  
• [Y] US 2005175533 A1 20050811 - THOMAS THEODORE J [US], et al  
• [A] FR 2924035 A1 20090529 - ROUX SEBASTIEN [FR], et al  
• [Y] PAUL CHO ET AL: "Comparison of iron-, nickel-, copper- and manganese-based oxygen carriers for chemical-looping combustion", FUEL, IPC SCIENCE AND TECHNOLOGY PRESS, GUILDFORD, GB, vol. 83, 1 January 2004 (2004-01-01), pages 1215 - 1225, XP009117185, ISSN: 0016-2361, DOI: 10.1016/J.FUEL.2003.11.013  
• [A] GARCIA-LABIANO F ET AL: "Temperature variations in the oxygen carrier particles during their reduction and oxidation in a chemical-looping combustion system", CHEMICAL ENGINEERING SCIENCE, OXFORD, GB, vol. 60, no. 3, 1 February 2005 (2005-02-01), pages 851 - 862, XP027646068, ISSN: 0009-2509, [retrieved on 20050201]  
• See references of WO 2012155059A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2012155059 A1 20121115; WO 2012155059 A8 20130214**; AU 2012253332 A1 20131219; AU 2012253332 A2 20140116;  
AU 2012253332 B2 20170511; CA 2835421 A1 20121115; CA 2835421 C 20200218; CN 103635673 A 20140312; CN 103635673 B 20160504;  
EP 2707583 A1 20140319; EP 2707583 A4 20141022; EP 2707583 B1 20190710; EP 3584426 A1 20191225; EP 3584426 B1 20210414;  
ES 2746905 T3 20200309; ES 2880629 T3 20211125; US 10502414 B2 20191210; US 2014295361 A1 20141002; US 2017370573 A1 20171228;  
US 9777920 B2 20171003

DOCDB simple family (application)  
**US 2012037557 W 20120511**; AU 2012253332 A 20120511; CA 2835421 A 20120511; CN 201280031081 A 20120511;  
EP 12782066 A 20120511; EP 19185071 A 20120511; ES 12782066 T 20120511; ES 19185071 T 20120511; US 201214116627 A 20120511;  
US 201715685951 A 20170824